



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/893,146 | 06/26/2001 | Thomas Malzbender | 10003322-1 | 3830 |

7590 01/16/2004
HEWLETT-PACKARD COMPANY
Intellectual Property Administration
P.O. Box 272400
Fort Collins, CO 80528-9599

| EXAMINER |
|----------|
|----------|

SANTIAGO, ENRIQUE L

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

2671

2

DATE MAILED: 01/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/893,146

Applicant(s)

MALZBENDER ET AL.

Examiner

Enrique L. Santiago

Art Unit

2671

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 June 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☒ Claim(s) 5-8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto US patent no. 6,256,036 B1 in view of Wakabayashi 6,407,738 B1.

-Regarding claim 1, Matsumoto teaches a method of operating a data processing system to generate a three-dimensional model of a scene from a plurality of photographs of said scene comprising (see column 1, line 60-column 2, line 3): defining an interior space containing part of said scene (see column 6, lines 26-31), said interior space being divided into a plurality of interior voxels (see figs. 23, 27 and 35, column 22, lines 11-16); defining an exterior space surrounding said interior space (see column 21, lines 54-58), said exterior space being divided into a plurality of exterior voxels (see column 15, lines 64-67, column 21, lines 54-58), wherein said exterior voxels are chosen such that said exterior voxels do not overlay one another and there is no space between said exterior voxels in said exterior space and examining each voxel in said interior and exterior spaces to determine if said voxel can be seen in at least two of said photographs (see figs. 9 and 12, column 18, line 66-column 19, line 13), and if said voxel can be seen, determining whether said voxel is empty (see column 13, lines 50-64).

Art Unit: 2671

Matsumoto does not directly teach a method wherein at least two of said exterior voxels have different sizes. However in similar art Wakabayashi teaches said limitation (see figs. 16 and 17, column 4, lines 18-28).

Therefore it would have been obvious to one skilled in the art at the time of the invention to use said method because, it could provide a method and a unit for the formulation of an analytical model that can be analyzed using a conventional analytical processing unit while automatic element division is performed using voxel data (see column 1, lines 50-53).

-Regarding claim 2, Matsumoto further teaches a method wherein all of said interior voxels have the same size (see fig. 23, column 18, lines 11-22 and 39-42).

-Regarding claim 3, Wakabayashi further teaches a method wherein the size of said exterior voxels increases as a function of the distance between said exterior voxels and said interior space (see column 15, lines 18-26).

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 4 recites the limitation "wherein one of said exterior voxels extends to infinity" it is unclear what extends to infinity (the distance, the size?).

Art Unit: 2671

Allowable Subject Matter

Claims 5-8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US patent no. 6,222,937 B1

US patent no. 6,351,572 B1

US patent no. 6,363,169

US patent no. 6,373,977 B1

US patent no. 6,571,024 B1

US patent no. 6,573,912 B1

US patent no. 5,898,793

US patent no. 6,084,979

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Enrique L. Santiago whose telephone number is (703) 306-5908. The examiner can normally be reached on Monday to Friday from 7:00 A.M. to 3:30 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Zimmerman, can be reached at (703) 305-9798.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Art Unit: 2671

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,
Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Enrique L. Santiago

January 9, 2004


MARK ZIMMERMAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600